



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,630	05/24/2006	Shinya Takagi	034620-144	4372
7590 01/16/2009				
Robert E Krebs THELEN REID & PRIEST Post Office Box 640640 San Jose, CA 95164-0640			EXAMINER TORRES RUZ, JOHALI ALEJANDRA	
			ART UNIT 2838	PAPER NUMBER
			MAIL DATE 01/16/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/580,630

**Applicant(s)**

TAKAGI ET AL.

**Examiner**

JOHALI A. TORRES RUIZ

**Art Unit**

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 October 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/CDC)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. This office action has been issued in response to the amendment filed on October 17, 2008.
2. Claims 1-3 are pending. Applicant's arguments have been carefully and respectfully considered. Rejections have been maintained where arguments were not persuasive. Also, new rejections based on the amended claims have been set forth.
3. Accordingly, claims 1-3 are rejected, and this action is made FINAL, as necessitated by amendment.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (U.S. Patent Number 5,932,990) and further in view of Baldwin et al. (U.S. Patent Number 6,583,603).
6. Claim 1: Kaneko teaches a DC power supply apparatus (4); a load device (3); a lithium ion battery (1a – 1n) for backup that is connected in parallel with said DC power supply apparatus and said load device (Fig.1); a charging path; a switch (2) that disconnects said lithium ion battery to said load device (Col.4, Lines 38-40) (Fig.1).

Kaneko does not explicitly teach a charging current limiting circuit that is connected in series with said lithium ion battery and supplies a charging current of an arbitrary value independent of load fluctuations in the charging path of the lithium ion battery; and a control circuit that monitors the voltage value of said charging path, sets a reference voltage setting used for setting the charging current of an arbitrary value in said charging current limiting circuit, and controls said switch when said voltage of said charging path exceeds a specified voltage value during charging.

Baldwin teaches a charging current limiting circuit that is connected in series with a battery and supplies a charging current of an arbitrary value independent of load fluctuations in the charging path of the lithium ion battery; and a control circuit that monitors the voltage value of said charging path, sets a reference voltage setting used for setting the charging current of an arbitrary value in said charging current limiting circuit (Col.9, Lines 3-10), and controls said switch when said voltage of said charging path exceeds a specified voltage value during charging (Col.10, Lines 41-48) (Col.4, Lines 42-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have had the teachings of Baldwin in the device of Kaneko to have prevented the battery from receiving damaging excess recharge current levels (Col.9, Lines 6-10) and for isolating the battery from load and the primary power supply (Abstract).

7. Claim 2: Kaneko and Baldwin teach the limitations of claim 1 as discussed above. Kaneko teaches a plurality of said lithium ion batteries are connected in series

(Col.4, Lines 32-36), and said power supply system is further provided with a voltage regulation circuit (13) that is connected in parallel with each lithium ion battery of said plurality of series-connected lithium ion batteries (Col.4, Lines 64-67) (Col.5, Lines 1-3), detects a full-charge voltage in each of said lithium ion batteries and bypasses said charging current (Col.4, Lines 55-63).

8. Claim 3: Kaneko teaches a DC power supply apparatus (4); a load device (3); a lithium ion battery (1a – 1n) for backup that is connected in parallel with said DC power supply apparatus and said load device (Fig.1); a charging path; a switch (2) disconnects said lithium ion battery to said load device (Col.4, Lines 38-40) (Fig.1); a voltage regulation circuit (13) that is connected in parallel with each lithium ion battery of said plurality of series-connected lithium ion batteries (Col.4, Lines 64-67) (Col.5, Lines 1-3), detects a full-charge voltage in each of said lithium ion batteries and bypasses said charging current (Col.4, Lines 55-63).

Kaneko does not explicitly teach a charging current limiting circuit that is connected in series with said lithium ion battery and supplies a charging current of an arbitrary value independent of load fluctuations in the charging path of the lithium ion battery; and a control circuit that monitors the voltage value of said charging path, sets a reference voltage setting used for setting the charging current of an arbitrary value in said charging current limiting circuit, and controls said switch when said voltage of said charging path exceeds a specified voltage value during charging.

Baldwin teaches a charging current limiting circuit that is connected in series with a battery and supplies a charging current of an arbitrary value independent of load

fluctuations in the charging path of the lithium ion battery; and a control circuit that monitors the voltage value of said charging path, sets a reference voltage setting used for setting the charging current of an arbitrary value in said charging current limiting circuit (Col.9, Lines 3-10), and controls said switch when said voltage of said charging path exceeds a specified voltage value during charging (Col.10, Lines 41-48) (Col.4, Lines 42-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have had the teachings of Baldwin in the device of Kaneko to have prevented the battery from receiving damaging excess recharge current levels (Col.9, Lines 6-10) and for isolating the battery from load and the primary power supply (Abstract).

### ***Response to Arguments***

9. Applicant's arguments filed October 17, 2008 have been fully considered but they are not persuasive.
10. In response to applicant's argument that Kaneko cannot perform controlling the switch as performed in the present application. The claims limitation is a switch that connects or disconnects a lithium ion battery from a DC power supply or a load. Kaneko teaches a switch (2) that connects a lithium ion battery from a load device (3) (Col.4, Lines 38-40).
11. In response to applicant's argument that Kaneko cannot protect the assembled battery from overcharging and over-discharging. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking

references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

12. In response to applicant's argument that Baldwin does not disclose a charging current limiting circuit. Baldwin teaches the rectifier is equipped with a current limiting function (Col.9, Lines 3-6).

13. In response to applicant's argument that the specific means for the advantage of preventing the battery string from receiving damaging excess recharge level is unclear. Baldwin teaches that by using the current limiting function in the rectifier the current output is limited to a predetermined maximum that prevents the battery string from receiving damaging excess current (Col.9, Lines 3-10).

14. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a charging current control element and a bypass current limiting element of a voltage regulation system) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### **Conclusion**

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHALI A. TORRES RUIZ whose telephone number is (571)270-1262. The examiner can normally be reached on M- F 9:30am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on (571) 272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Akm Enayet Ullah/  
Supervisory Patent Examiner, Art  
Unit 2838

/J. A. T./  
Examiner, Art Unit 2838  
JAT